

REMARKS/ARGUMENTS

Page 1 of the specification has been amended to update the cited related applications. No new matter is provided with this amendment.

Election/Restrictions

Applicants are confused by the Examiner's choice of election of Claims 1-24, 37-39, and 56-58 and the withdrawal of Claims 25-36, 40-55, and 59-68.

Claims 37-39 and 56-58 that are included within the "elected" claims relate to species of developability-enhancing compounds that are "substituted aromatic acids" (Claims 37 and 56, option "o" in Claim 5), "substituted aromatic esters" (Claims 38 and 57, option "p" in Claim 5), and "substituted aromatic amides" (Claims 39 and 58, option "q" in Claim 5). None of these options is within the class of compounds for option "d" (polyhydric phenols) in Claim 5, which option Applicants had chosen in the election of species for searching.

In addition, Applicants are perplexed as to why Claims 30, 31, 42, 43, 49, 50, 61, 62, 67, and 68 were "withdrawn" since they, in combination with the pertinent independent claims, have essentially the same subject matter as Claims 1 combined with Claims 7 and 8. The mere fact that one set of claims is directed to a "composition" and other sets to "articles" and "methods" should not matter—no restriction was required between groupings of claims—only among species recited in Claim 5.

Thus, Applicants request a modification of the Examiner's statements about "elected" and "withdrawn" claims, or a clear explanation of why the statements on page 2 of the Office Action are correct, at least for the purposes of providing a clear record for any possible Petition by Applicants.

Rejection Under 35 U.S.C. §103(a)

Claims 1-24, 37-39, and 56-58 have been rejected as unpatentable over WO 01/096682 (Levanon et al.) in view of U.S. Patent 6,013,411 (Aoi et al.) or U.S. Patent 6,423,467 (Kawauchi et al.). This rejection is respectfully traversed.

Applicants' claimed invention is directed to radiation-sensitive compositions, positive-working imageable elements (such printing plate precursors), and methods of use, in which an acetal resin that can be dissolved in aqueous alkaline solutions and a developability-enhancing compound are used. The acetal polymers are described in detail beginning on page 7 of the present application.

Applicants have found that specific combinations of these acetal polymers and certain developability-enhancing compounds allow the preparation of positive-working compositions and elements that require less total illuminating (exposing) energy to produce a desired level of developability (that is, they have higher "speed") for a given developability. The developability-enhancing compounds increase the solubility of the coated composition after exposure to imaging radiation. Moreover, the exposed portions of the coated composition does not return to its pre-irradiation solubility in aqueous solutions (developers) after any amount of time. The improvement in "speed" is quite evident from the data provided in the Examples shown in the present application compared to the Comparative Examples where the developability-enhancing compound was omitted. Thus, not only do these compounds enhance the developability of the imaged element, but they allow successful development of elements that are imaged with lower energies. These results were not expected to Applicants who are of at least ordinary skill in the art, based on their experience and understanding of the literature.

The Office Action argues (pages 2-3) that Levanon et al. teaches an imageable element having a composition that includes an acetal polymer and further teaches that other known resins, such as phenolic resins, can also be included in the compositions. The Office Action then relies upon Aoi et al. and Kawauchi et al. to teach the use of conventional phenolic resins such as novolacs and argues that it would have been obvious to one of ordinary skill in the art to prepare the material of Levanon et al. by choosing the resins of Aoi et al. or Kawauchi et al. with a reasonable expectation of achieving a material having a high etch resistance.

Applicants disagree with the reasoning in the Office Action that the cited teaching of either Aoi et al. or Kawauchi et al. with Levanon et al. would render their claimed invention unpatentable.

Applicants do agree with the Examiner that Levanon et al. fails to teach or suggest the combination of an acetal polymer with a developability-enhancing compound according to the presently claimed invention. However, the Examiner's reliance upon Aoi et al. and Kawauchi et al. to supply the missing teaching is misplaced.

Applicants' developability-enhancing compounds, especially the polyhydric phenols (option "d" of Claim 5), are not polymeric materials. Examples of such compounds are described on page 10 (lines 1-4) and in original Claims 7 and 8 and it is clear from those examples that polymeric materials such as "phenolic resins" are not contemplated as developability-enhancing compounds. Applicants' polyhydric phenols are molecules or additives in "non-polymerized" form, not resins.

Phenolic resins such as novolacs described in Aoi et al. and Kawauchi et al. are macromolecular compounds formed from the condensation of monomers (i.e. small molecules) such as phenols and aldehydes. Cresols, xylenols, bisphenol A, resorcinol, pyrogallol are taught as the building blocks or "specific monomers" for making the phenolic resins in Aoi et al. (Col. 42, lines 43ff). Similarly, they are taught in Kawauchi et al. (Col. 28, lines 41ff) as reaction components, e.g. of "phenol/formaldehyde" and "cresol/formaldehyde" resins. Nothing in these specific teachings would suggest using the "monomers" that are used to prepare phenolic resins, as developability-enhancing compounds in combination with acetal resins in Applicants' claimed invention.

Thus, the Examiner's focus on phenolic resins, or of reactants used to make phenolic resins, in Aoi et al. and Kawauchi et al., is incorrect since those resins are unrelated and irrelevant to Applicants' claimed invention.

It is also clear from the teaching in Aoi et al. and Kawauchi et al. that their imaging chemistry is different from that described in either Levanon et al. or the presently claimed invention, both of which include the use of acetal resins. The imaging chemistry of Aoi et al. and Kawauchi et al. rely on the presence of diazo resins and a photo acid generator that is a compound that generates an acid upon irradiation. These imaging compositions provide a solubility differential upon irradiation due to the acid generated thereby. Thus, these secondary references teach a "chemical" mechanism (i.e. generation of a chemical) of changing the solubility of the imaged layer(s). This is different from

the presently claimed invention where the developability-enhancing compound (e.g. polyhydric phenols) provide the desired reduction in imaging “speed” and solubility enhancement. Applicants’ claimed invention provides these advantages based on a “physical” mechanism (no generation of a chemical). As pointed out on page 6 (lines 25-31), the presence of the developability-enhancing compound in the present invention reduces the imaging energy required for development and areas not exposed do not exhibit a significant change in the rate of dissolution in developer.

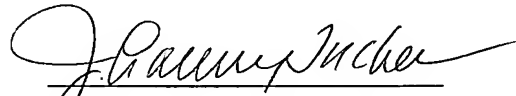
Levanon et al. teaches that solubility from imaging is achieved by the presence of a pigment and IR dye (page 16, paragraph 25). Because of the different imaging mechanisms and chemistry used in Aoai et al. and Kawauchi et al. compared to Levanon et al. (using polyvinyl acetals), there is really no technical reason to combine the teachings in the secondary references with that in Levanon et al. There is no technical reason why a skilled worker would include diazo resins and photo acid-generating compounds with the polyvinyl acetals of Levanon et al.

Applicants are also perplexed by the argument in the Office Action that the combined teaching of the cited art would be useful for “achieving a material having a high etch resistance”. This property is irrelevant to the presently claimed invention. As pointed out above, the presently claimed invention unexpectedly provides greater imaging “speed” as well as enhanced imaged layer solubility at lower speeds when the developability-enhancing compound is included. This has nothing to do with “etch resistance” that was one of the unexpected properties of the invention described and claimed in Levanon et al.

For all of these reasons, it is believed that the rejection of the claims in this application over the combination of Levanon et al. with either Aoai et al. or Kawauchi et al. is in error and should be withdrawn.

In view of the foregoing amendments and remarks, reconsideration of this patent application is respectfully requested. A prompt and favorable action by the examiner is earnestly solicited.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "J. Lanny Tucker", written over a horizontal line.

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